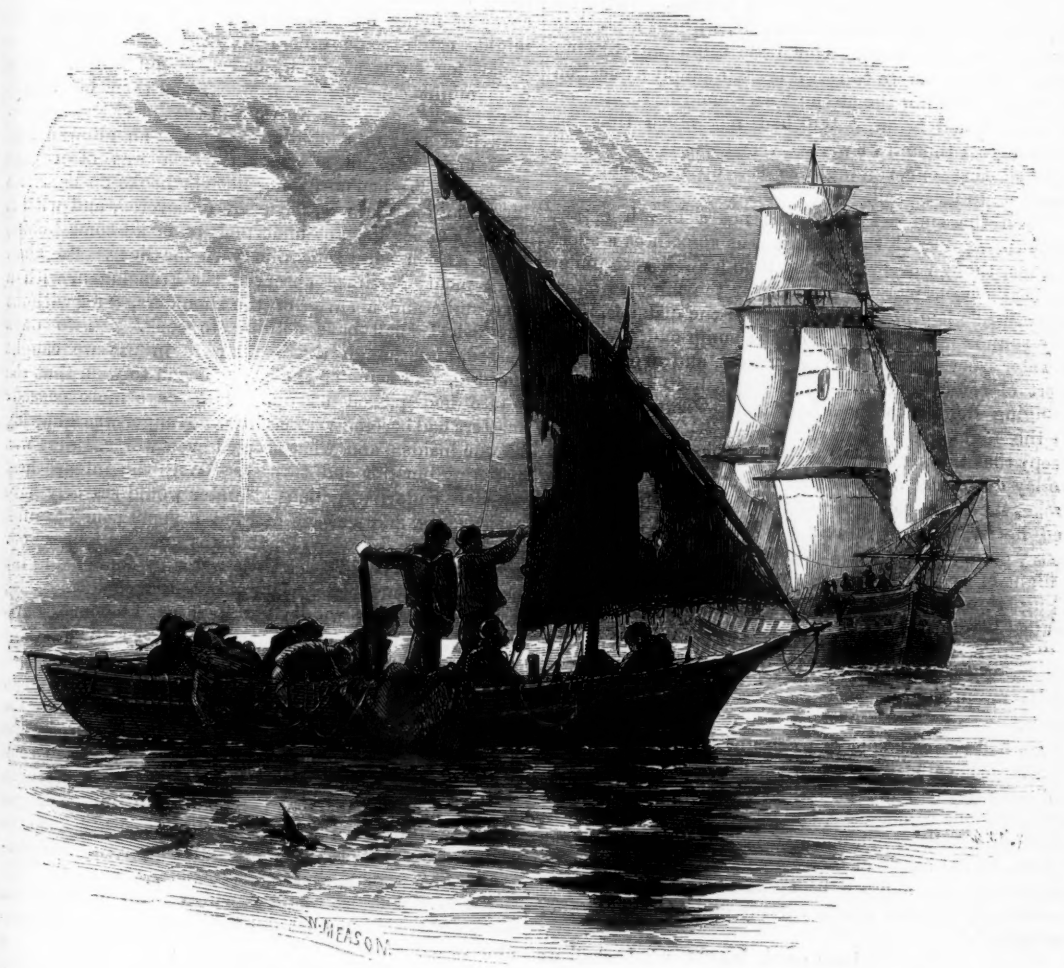
THE
LEISURE HOUR.

A FAMILY JOURNAL OF INSTRUCTION AND RECREATION.

"BEHOLD IN THESE WHAT LEISURE HOURS DEMAND,—AMUSEMENT AND TRUE KNOWLEDGE HAND IN HAND."—*Cowper.*



TIMELY RELIEF.

JAMES BRAITHWAITE THE SUPERCARGO.

CHAPTER VII.

Our chief hope of escaping an unpleasant examination by the pirate existed in the possibility that we had not been observed from her deck. Had we had any sail set we could not fail to have been so. Not, we knew, that so small a craft as ours would be considered worth overhauling; but in case we might give information of the pirate's whereabouts, it might be thought expedient to put us out of the way. So we feared. We therefore watched the progress of the Mignonne and the brig with intense interest, earnestly hoping that the latter would lead the pirate a long chase before she was captured, if she could not escape altogether, which of course we hoped she would. La Roche had certainly managed to inspire O'Carroll with an extraordinary dread and hatred of him, for brave and calm in danger as our friend had lately shown himself to be, he was now completely unnerved, and I saw him crouching down in the boat as if, even had she been seen, he could have been distinguished. On sailed the brig, gradually her sails began to disappear below the horizon. The pirate still continued the chase. For some time no one in the boat

thought of working. We were roused up by finding that the water was rapidly gaining on us, and we all had to turn to and pump and bale harder than ever. We were in hopes that after all the brig might escape, when the boom of a gun came over the water, followed by another and another. It was too probable that the pirate had got her within range. Both vessels had now disappeared below the horizon, at the same time the wind where we were had completely died away. As far as the pirate was concerned, we began to breathe more freely: it was not likely that he would again pass near us. But the sun shone forth from the clear sky with intense heat, roasting our heads and the brains within them, and making whatever pitch remained between the planks of our deck bubble up as if it had been boiling. There we lay, our boat rolling from side to side, without a particle of shade to shelter us. Our little cabin was like an oven. When we were to rest it became simply a question whether in making the attempt we should be roasted on deck or baked below. We had not much time for idleness yet: though we worked very hard, it was not till nightfall that our rigging was set up sufficiently to enable us to make sail.

When the sun set there was not a breath of air, while the surface of the ocean was as smooth as a sheet of glass, though every now and then a swell rose under the boat's keel, making her roll for ten minutes afterwards, while it glided slowly away in the distance. The only sounds were the clank of the pump and the dash of water from the scuppers or buckets, and an occasional snort of some huge fish, or the splash it made when plunging down into its liquid home. Thus the hours of the night passed away. We were so weary and sleepy that the instant we were relieved from the pump we lay down and were lost in forgetfulness. The day broke, the sun rose higher and higher, and beat hotter and hotter, and all around us was the same smooth, glassy ocean. Now and then the surface was broken by a flight of flying fish as they rose out of it and darted along through the air, glittering bright in the sunbeams, like a covey of silver birds.

"Ah, now; if some of you would just have the goodness to come aboard here, you would serve us nicely for breakfast," exclaimed Trundle, as he observed them.

He had scarcely spoken when upwards of a dozen out of a large shoal leaped, or flew rather, right in among us, while as many more passed clean over the boat. It was a curious coincidence, and at all events afforded us not only a substantial, but a very delicious meal, cooked by the skilful hands of Monsieur Jacotot. It put us all in good spirits, and we began to look at the future in a tolerably hopeful spirit, till my midshipman brother exclaimed—

"I say, if this fun lasts much longer, what shall we do for grub? The sea-pie we have brought has gone bad, and I am afraid that the beef and pork won't keep good many hours out of the brine."

"You may put them in the past instead of the future tense, my boy," observed Trundle, who had been examining the lockers; "I doubt if any stomach with less powers than a shark's could swallow a bit of the meat we have got on board."

"Then on what have we got to exist till we can reach the shore?" I asked, with a feeling of serious anxiety.

"Why," answered William, "we have biscuits and half a cheese—at least we had half when we sailed, but it is rather gone—and a few mangoes and bananas and plantains, and a melon or two, and some tea and coffee and sugar. I am afraid we haven't much else, except a cask of water, and that was rather leaky, like this precious craft."

"Then let us look to the cask, gentlemen," said O'Carroll. "And don't throw the meat away, putrid though it may be. The Frenchman may cook it so as to make it go down, and we don't know how hard we may be pressed for food."

The water-cask was examined, happily not altogether too late, but a third of the precious liquid had run out. I said nothing, but sad forebodings filled my mind. Even with a compass to steer by and a good breeze to carry us along, we might be several days reaching Port Louis, or indeed any habitable coast we could make. We might be kept out much longer, and then how could we exist? We could scarcely hope that another covey of flying fish would come on board, though we might catch some others if we could manufacture hooks, for I was afraid we had none on board. This calm might continue for a week, and then we might have another gale, for we were in the hurricane season. I advised that we should at once go on an allowance of food and water, a suggestion which was of course adopted. We had no fishing lines or hooks on board: a bit of an old file was, however, discovered, and with it and a hammer Jacotot undertook to make some hooks, while Kelson spun some fine yarn for lines. "I shall have plenty of time," observed the Frenchman, with a wan smile and a shrug of the shoulders, "for without the fish I shall have nothing to cook." Two days passed, and though the hooks were in use we caught nothing, and some of the party began to wish that the pirate had picked us up. Two days more passed: matters had become very serious. Hunger was gnawing at our insides, and what seemed even worse, thirst was parching our lips and throats. With the intense heat we were enduring, gallons of water would scarcely have satisfied us, and we each had but a small wineglass full three times a day. When that was gone, as long as our fuel lasted we could get a little water by condensing the steam from our kettle. Our thirst became intolerable; yet the few drops we did get kept us, I believe, alive. I do not wish to dwell on that time. My own sufferings were great, but they were increased by seeing those of my young brother and his lighthearted companion, both of them about, as I feared, to pass away from the world they had found so enjoyable. The sun rose, and set, and rose again, and each day it appeared to send down its heat with an increased intensity of strength as we grew weaker and weaker. A new danger threatened us: we could even now scarcely keep the boat clear of water; should our strength fail altogether, as seemed but too probable, she would sink below us. Our lot was that which many poor seamen have endured, but that did not make it more supportable to us.

Our last particle of food had been eaten, the last drop of water nearly exhausted. The strongest might endure for a day or two, the weakest ones must sink within a few hours. Even O'Carroll, strong as he seemed, was giving way. He sat dull and unconscious, his eyes meaningless, only arousing himself by a great effort. My brother's head rested on my arm, and I was moistening his lips with the few drops obtained from the cask. Suddenly Kelson, who had been gazing round the horizon, started up, crying out, "A breeze! a breeze! I see it coming over the water." I turned my eyes to the west, the direction to which he pointed. There I saw a dark blue line quickly advancing towards us. Even already on either side cat's-paws were to be seen just touching the surface, then vanishing again, once

more to appear in a different direction as the light currents of air, precursors of the main body of the wind, touched the surface. The effect on our fainting party was magical: even the poor boys tried to lift up their languid eyes to look around. Another shout from Kelson a few minutes afterwards roused us all still more. "A sail! a sail! she's standing this way too." Even Jacotot, who had completely given way to despair, started to his feet at the sound, and weak though he was, performed such strange antics expressive of his joy on the little deck that I thought he would have gone overboard. "If you've got all that life in you, Mounseer, just turn to at the pump again, and make some use of it, instead of jigging away like an overgrown jackanapes," growled out Kelson, who held the poor Frenchman in great contempt for having knocked under, as he called it, so soon. Jacotot gave another skip or two, and then seizing the pump-handle, or break, as it is called, burst into tears. The two midshipmen and boys soon relapsed into their former state, while O'Carroll seemed to forget that relief was approaching, till on a sudden the idea seized him that the stranger which was now rapidly nearing us was no other than the Mignonne, though she had been last seen in an opposite direction, and there had been a dead calm ever since. "Arrah, we'll all be murdered entirely, by that thief of the world La Roche, bad luck to him!" he cried out, wringing his hands. "It was an unlucky day that I ever cast eyes on his ugly face for the first time; and now he's after coming back again to pick me up in the middle of the Indian Ocean, just as a big black crow does a worm out of a turnip field."

In vain I tried to argue him out of the absurdity of his notion. He turned sharply round on me.

"It's desaving me now, ye are, and that isn't the part of a true friend, Mr. James Braithwaite," he exclaimed. "Just try how he'll treat you, and then tell me how you like his company."

I saw that there was not the slightest use reasoning with him, but that it would be necessary to watch him, lest in his frenzy he should jump overboard. As the dreadful idea came on me that he might do so, I saw the black fin of the seaman's sworn foe, a shark, gliding towards us, and a pair of sharp eyes looking wistfully up towards me, so I fancied, as if the creature considered the leaky boat and its contents a dainty dish prepared for his benefit. It made me set to work to bale with all the strength I could muster. Seeing me so employed, O'Carroll for a moment forgot his mad idea, and followed my example. Often and often I turned my gaze towards the approaching ship. It seemed even still open to doubt whether she would pass near enough to observe us.

At length the breeze reached us, and hoisting our sails as well as our strength would allow, we stood in a direction to come across the course the stranger was steering. I told Kelson, in a whisper, to assist me in keeping a watch on O'Carroll, for as we drew nearer the stranger, so did his uneasiness increase, and he was evidently still under the impression that she was the dreaded Mignonne. William and Trundle looked at her with lack-lustre eyes. I asked Kelson what he thought she was? "A small Chinaman, or a storeship, may be, sir," he answered. "She's English, certainly, by the cut of her sails."

"You hear what he says," I observed to O'Carroll. "I think the same myself. We shall be treated as friends when we get on board."

"Ye are after desaving me, I know ye are," cried the poor fellow, turning round and giving a reproachful glance at me. "Don't ye see the ugly villain La Roche himself standing on the cathead ready to order his crew of imps to fire as soon as we get within range of their guns?"

This notion so tickled Kelson's fancy that he fairly burst into a fit of laughter, in which I and the rest of the party faintly joined, from very weakness, for most of them had not heard what was said. Even O'Carroll himself imitated us. Suddenly he stopped. "It's no laughing matter, though, let me tell you," he observed gravely, after some time had elapsed, and the stranger had neared us so that we could see the people on deck. "But where's La Roche? Oh, I see, he's aft there, grinning at us as usual." He pointed to a most respectable looking old gentleman who was, I supposed, the master of the ship.

"You are mistaken in that," said I, feeling the importance of keeping him quiet till he could be got on board. "If that is the Mignonne, she has been captured, and is in possession of a British crew. You'll see that I am right directly."

The ship was shortening sail as I spoke. We were soon alongside. Even at a distance our pitiable condition had been observed. We were one after the other hoisted on deck, for even Kelson could scarcely get up without help. I gave a hint to the doctor to look after O'Carroll. "I am right," I remarked to my friend. "If La Roche is on board, he is safe under hatches; so the best thing you can do is to turn in, and go to sleep. You want rest more than any of us."

Led by the surgeon, he went quietly below, and I hoped with soothing medicine and sleep would be soon all to rights again.

The ship proved to be, not what Kelson had supposed, but a vessel with free emigrants bound out to the rising town of Sydney, in New South Wales—a colony generally called Botany Bay, established some few years before, by Captain Phillips of the navy, chiefly with convicts and the necessary soldiers to look after them. We had just told our tale, and the passengers had expressed their sympathy for us, when I heard Jacotot give a loud cry of dismay. On looking over the side the cause was explained—the masts of our unhappy little craft were just disappearing under the surface. This was the natural consequence of our neglecting to pump her out, and the ship, which was going ahead, dragging her through the water, when of course it rushed in through her open seams with redoubled speed. Poor Jacotot tore his hair and wrung his hands, and wept tears of grief for his wretched craft; but he did not gain as much sympathy as would have been shown him had he been more quiet, though new friends congratulated us the more warmly in having got out of her before she met her fate. Food and rest quickly set most of us to rights, and the following day William and Trundle and I were able to take our places at the cabin table with the rest of the passengers. O'Carroll was kept in bed with fever, though he had got over his idea that La Roche was on board. The old gentleman he had mistaken for him proved to be a minister of the gospel, who had been invited to accompany a party of the emigrants.

We found that things were not going on in at all a satisfactory way on board. The master had died before the ship reached the Cape; the first officer, Mr. Gregson, who had now charge, was obstinate and self-opiniated when sober, and he was very frequently intoxicated; the second was a stupid fellow and no navigator; and both were jealous of the third, who was a superior, intelligent young man, and in numerous ways they did their utmost to annoy him. This accounted for the good ship, the

Kangaroo, being very much out of her proper course, which was far to the southward of where she picked us up. Most disastrous consequences were to occur. William and Trundle told me that they had been making their observations; that they wondered how the ship had got thus far, and that they should be much surprised if she got much farther. A very large proportion of the ships cast away and lives sacrificed are so in consequence of the habitual intoxication of the masters and their officers. I venture to make this distinct assertion from the very numerous instances I have known and heard of. We did not wish to alarm the passengers, none of whom had been at sea before, and were not aware of the danger they were running. Had our schooner still floated, I should have proposed taking her to the first island we could make and there repairing her. We asked Mr. Gregson if he would undertake to land us at Port Louis, offering him at the same time payment if he would do so; but he positively refused, declaring that nothing should induce him to go out of his course, and that we must stick to the ship and work our passage till she reached her destination.

Believing that, as he was short-handed, his object in detaining us was to get more hands to work the ship, this we positively refused to do. "Very well, then, we'll see who is master on board the Kangaroo," he replied, with an oath. "You tell me that three of you belong to a man-of-war; but I find you in a French boat, and how do I know that you are not deserters or convicts? and I'll treat you as such if you don't look out." This conduct was so unexpected, and so different from the kind way in which we had been treated by the passengers, that we did not know what to say. We agreed to wait till we could consult O'Carroll; and Trundle undertook to get a look at the chart the captain was using, and to try and find out where he had placed the ship. The wind had hitherto continued very light, so that we had made but little way since we came on board. The day following the unpleasant conversation I have described, O'Carroll was so much recovered that he was able to come on deck. Though Irishmen have not the character in general of being good seamen, I considered from what I had seen of him that he was an exception to the general rule. I told him what we had remarked.

"When the time comes I'll see what I can do," he answered; "but it is ticklish work interfering with such fellows as the present master of this ship, unless one advises the very thing one does not want done."

"We may soon require the exercise of your skill," I remarked. "It appears to me that there will speedily be a change in the weather."

"Little doubt about that, and we shall have it hot and strong again soon," he answered, looking round the horizon.

"Not another hurricane, I hope," said I.

"Not quite sure about that," he answered. "Were I master of this ship, I should make all snug for it; but if I were to advise Gregson to do so, he'd only crack on more sail to show his superior seamanship. I've had a talk with the surgeon, M'Dow, a very decent sort of young fellow, and so I know the man we have to deal with."

An hour or two after this, the wind had increased to half a gale, and the Kangaroo was tearing away through the sea with a great deal more sail than a prudent seaman would have carried. Unfortunately, William or Trundle had remarked that it was much more important to shorten sail on the appearance of bad weather on board a short-handed merchantman, than on board a man-of-war with a strong crew. I saw O'Carroll looking anxiously aloft, and then again to windward. At last he could stand it no longer.

"You'll let the wind take the topmasts out of the ship if you don't look out, Captain Gregson," he remarked.

"What business have you to come aboard this ship and to pretend to teach me?" answered the master, who was more than half drunk. "If you do, take care. I'll turn you out of her, and let you find your own way ashore."

While he was speaking a loud crack was heard, and the mizen-topmast was carried over the side. This made him order the crew aloft to shorten sail. "You go too, you lazy youngsters," he exclaimed, seeing William and Trundle on deck.

They sprung up the rigging without a word of reply. I watched them with great anxiety, for the masts bent like whips, and I was afraid every moment to see the main share the fate of the mizen-mast, to the destruction of all on the yards. Still the master, as if indifferent to what might happen, was not even looking aloft. The two midshipmen had just reached the top, and were about to lie along the yard, when O'Carroll shouted: "Down, all of you; down, for your lives!"

His voice arrested their progress, and two of the men already on the yards sprang back into the top; but the warning came too late for the rest. A tremendous squall struck the ship. Over she heeled, till the lee bulwarks were under water. A loud crash followed. Away went the main-topmast, and yard, and struggling sail, carrying six human beings with it. Five were hurled off into the now foaming sea. We saw them for an instant stretching out their arms, as if imploring that help which it was beyond our power to give. The ship dashed onward, leaving them far astern. One still clung to the rigging towing with the spar alongside. The ship still lay almost on her beam-ends.

O'Carroll saw the possibility of saving the poor fellow. Calling out to me to lay hold of a rope, one end of which he fastened round his waist, he plunged overboard. I could scarcely have held it, had not William and Trundle with Kelson come to my assistance. O'Carroll grasped the man. "Haul away!" he shouted. In another instant he was on board again with the man in his arms. The helm was put up, the ship righted, the men had got off the fore-yard, and away the ship flew, with the foretop-sail wildly bulging out right before the wind. In a few minutes it was blown from the bolt-ropes in strips, twisted and knotted together. The main-sail, not without difficulty, was handed, and we continued to run on under the foresail, the only other sail which remained entire, and it seemed very probable that that would soon be blown away.

All this time the terror of the unfortunate passengers was very great—the more so that it was undefined. They saw the captain, however, every now and then come into the cabin and toss off a tumbler of strong rum-and-water, and then return on deck, and shout out with oaths often contradictory orders. The gale all this time was increasing, until it threatened to become as violent as the hurricane from which we had escaped. I could not help wishing that we had not left our leaky little schooner. We might have reached some land in her. Now we did not know where we were going, except towards a region of rocks and sandbanks on which any moment the ship might be hurled. For ourselves it would be bad enough; but hard indeed for the poor women and children, of whom there were a dozen or more on board, several of them helpless infants.

As I looked on the man, who was thus perilling the lives of his fellow-creatures by his senseless brutality, I could not help thinking what a load of guilt rested on his head. His face was flushed, his features distorted, his eyes rolling wildly, as he walked with irregular steps up and down the deck, or ever and anon descended to the cabin to gaze stupidly at his chart, which was utterly useless, and to take a fresh draught of the liquor which had brought him to that state. Yet he was a fine, good-looking fellow, and pleasant mannered enough when sober and not opposed. I have known several such, who have for years deceived their owners and others on shore, led by outward appearance, till some fearful catastrophe has been the result of their pernicious habits.

Night came. The ship continued her mad career through the darkness; the wind howling and whistling, the loose ropes lashing furiously against the masts, and the sea roaring around. Below all was confusion. Numerous articles had broken adrift and were rolling about, the passengers crouched huddled together in the cabin, endeavouring to avoid them. Mothers pressed their children to their bosoms; the men were asking each other what was next to happen. The answer came with fearful import. "Breakers ahead! Breakers ahead!" There was a tremendous crash, every timber in the ship shook. She was on the rocks.

PRE-HISTORICAL MAN.

BY S. R. PATTISON, F.G.S.

I.

Lord Bacon begins his preface to "The Wisdom of the Ancients," by the statement that "the antiquities of the first age (except those we find in Sacred Writ) are buried in oblivion and silence." This is no longer true, for it is one of the paradoxes of modern days that we get better acquainted with antiquity as we reach farther from it. The printing-press has made all discoveries cumulative. Especially is this the case with regard to recent attainments in pre-historic lore. A new territory is as permanently added to our knowledge as if it were a newly-found planet. All our museums have a fresh case of objects; all our curiosity-lovers have a fresh set of uncouth relics. The miscellaneous contents of barrows and caves, long huddled into obscure corners of collections, are now brought into neatness and order by their classification into stone, bronze, and iron, and each of these is again subdivided by more minute divisions. Our flint implements and barrow-finds are increasing so fast, and quoted so frequently, that it will not be amiss to collect some of the leading facts.

It may startle some of our readers who have not personally examined the relics, to learn that it is now established as a fact, that the first inhabitants of our islands, and of the adjacent continent, were Esquimaux, at least in their mode of life, their implements, and their condition. The barbarous tribes occupying the Arctic regions, are now, save in the use of metals and foreign acquisitions, in a state of non-civilization exactly corresponding to that of our predecessors. Indeed, it would appear that the former are the actual descendants, driven northward, of our "oldest inhabitants." Any collection of implements from the lake-dwellings of Ireland, or from the refuse-heaps of the old Scandinavian folks in Denmark or Scotland, or from the cave-shelters of England, Germany, or France, or from the barrows and cairns of our own fields and fells, shows that the people of whom these are the relics knew the use of fire, built huts, felled timber, cultivated grain, domesticated animals, hunted, boated, fished, and fought. For awhile they were ignorant of metals, and made tools of native stone; then of imported stone, next of bronze, and last of iron; but, as may be expected, the implements of the first age continued to be used down to the last, and, indeed, are not yet extinct. To them belong the cromlechs and gallery-graves, and those grand monuments of the absolutely dark ages, Stonehenge and Carnac. The term Celtic, applied to these people and their works, only denotes that the period was characterised by a Celtic immigration. Not that the Celts destroyed the Fins, or were destroyed by Belgæ, nor that any total difference existed in the habits or implements of the three races. Doubtless, there were differences, but not such as enable us to assign to each their own share in works which appear to have been continuous and common, with minor variations, to all. We have, undoubtedly, first a Finnish or pre-Celtic age, then a Celtic, then a Belgian admixture, then a Roman invasion. Anterior to the last, we get three stages overlapping each other.

But whilst the historical end of this sequence can be plainly seen, coming down amidst recognised landmarks, and whilst even its middle age, the reindeer period, can also be clearly made out, the beginning eludes our vision. We correlate it with the mammoth and the woolly rhinoceros, but can give no positive dates. The level of the valleys was different, as the gravel and silt which has subsequently filled them testifies. The coast line, which was in its present average condition when the Danish rovers landed, was then somewhat less elevated. The climate was more rigorous, the rivers more powerful, and the ice more extended. The 3,000 cutting or digging tools found in the gravels of the Somme and the Thames, show that man was here, but we have no other token of his presence. Undoubtedly time must have flown by, in the succession of very many centuries, between the date of the rude stone tool and that of the bronze urn. But if we find that from the one to the other there is a regular gradation, interrupted, too, by the occasional introduction of foreign materials, we may safely infer that there has been but one series, however disturbed by the occurrence of physical changes, or varied by the occurrence of adventitious relics. The first flint implements indicate a hunter's wants amidst a hunter's field. They tell of the pursuit of game more vast than the sportsman can now follow or find. The practice of his art of tool-making on the shoals of the chalk gravel rivers, or of the mammalia in the scanty thickets, was suspended by the occurrence of a long-continued series of floods, until the ice-bound table-land of the water-sheds yielded to the influences of milder temperature, until the mammoth and its associates had died out. After a while, we know not how long, the Finlike tribes again visited and now remained on the lakes and river banks, and, in due time, reared their hovels and built their sepulchres, their temples, and their camps on the uplands. Chronology is quite at fault in attempting to assign any positive dates to these transactions; nor do the other sciences attempt to construct anything more than the faintest relative record; nor does the Bible deal with these occurrences or these localities: it refers neither to the people nor to the places, save by its general statement of the degeneracy and misery of the masses of mankind which had departed from the knowledge of God. We have all the ages before the advent of our Lord on earth, all the years before the Roman invasion of Gaul and Britain, in which to place the historic end

of that sad story which perhaps commenced long before the flood.

We shall get a more definite and accurate view of this curious subject, by classifying some leading types among the pre-historic relics. The following list is compiled chiefly from Mons. Mortillet's catalogue of the pre-historic industrial works in the Paris Exhibition, supplemented by Nillson's beautiful work on "The Primitive Inhabitants of Denmark," edited by Sir John Lubbock, and by the ample collection in Mr. Christy's Museum, Victoria Street, Westminster.* The attempt at chronological classification is our own.

First Period.—Mammoth Epoch.—Rough flint tools from the gravel of the Somme Valley, Allier Valley, Thames Valley, Bedford, Suffolk, associated with remains of extinct races of animals.

Flint flakes and barbs, slightly dressed as knives, and scrapers, found near Amiens. Mammoth, rhinoceros, &c., abounded in Europe.

Transition.—Tools of former type, with arrow-heads more carefully dressed, and flint scrapers. Moustier, in Dordogne, France. See Christy Collection.

Tools of former type, mingled with piercers and arrow-heads of finer workmanship, at Pontlevy, also with well-polished foreign stones.

Tools of former type, with flint flakes, at Clichy.

The same mixture, with more advanced art, in caves of La Vienne.

Objects of rude type mixed with bone ornaments and bone arrow-heads, and remains of hyena, rhinoceros, and elk, in the sepulchre at Aurignac.

In other caves in south of France, the bone-relics of extinct races of animals, mingled with dressed flint tools.

In the Grotto d'Arcy are two floors. In the lower one are found flint scrapers, with remains of the extinct fauna; in the upper one (of course consolidated long afterwards) are polished stone implements.

At Charente.—Tools of St. Acheul type, with abundant stone implements of polished period.

At Bruniquel.—Tools of first type, with harpoons and other implements of the reindeer period; some ornamented with figures. One having the distinct representation of the extinct mammoth.

La Chaise.—Flint flakes, with bone tools and reindeer horns.

Imola.—Somme Valley tools with arrow-points of second period.

Langerie. — Remains of extinct animals, with fish-hooks, barbs, and polished stone tools, pierced shells for ornament. Sculpture of Aurochs on bone.

Second Period.—Reindeer epoch. Mammoth not found. Manufactories of flint tools more fully dressed than preceding, stones for grinding and polishing. See remains from Pressigny in Christy Collection. Remains of reindeer, shell necklaces, and still finer flint tools and bones of domesticated animals.

Swiss bone tools and abundant relics of industry and art of lake-dwellers, also polished foreign stone tools.

Refuse heaps of Denmark.

Irish flint tools and net sinkers, fishing implements, &c.

Numerous caves in south of France with remains of reindeer.

Transition II.—Gallery tombs, with rude piercers of flint and drilled stone implements. Nillson.

Caves in Arriege.—Bones of horse, pig, dog, and beaver, with polished stone tools and pottery.

Somersetshire and Devonshire cave remains.

Yorkshire barrows, with flint tools and scrapers; pottery, but no metal.

The Cromlech era, with burials of stone age. See "Leisure Hour," May, 1866; particularly note the method of attaching the common flint implement represented on the inner surface of a cromlech cover in Brittany, p. 316.

Lake dwellings in Switzerland.

Contents of British barrows of the stone age.

Third Period.—Introduction of Metal. Flint and stone tools still used, but with finer pottery, more polished stones, more marks of domestication, bronze weapons, and ornaments. No relics either of extinct races of animals or of reindeer period.

Fourth Period.—Iron and History.—To this class belong the bulk of our barrow interments, and of the lake remains. Thirty lake-villages or forts, built on piles, with causeways of wood, have been discovered in Scotland, and more still in Ireland, where they are called crannoges, and were in use from the ninth down to the sixteenth centuries.*

A lively and popular summary of our existing knowledge on the whole subject of this class of relics, appeared in the *Times'* report of the Great French Exhibition of 1867:—

"As might be expected, France has produced a collection of extraordinary completeness and interest, although in some respects, other countries have special objects of considerable value. The French galleries show how many local antiquarian societies exist in the country, and the number of persons who take an interest in the contents of ancient kitchen heaps, and in the relics of past ages, while they demonstrate the enormous difficulty of joining on, as it were, one age to another, by a complete series of developments in their works. The chronological succession of the progress of national arts is not easily exhibited when there is no record of long periods of transition, and it is probable, nay, certain, that there must have been periods in which the age of unpolished stone implements, for instance, ran into the polished stone age, and when the polished stone age was mixed up with the age of bronze, and when bronze and iron were used together.

"'La Gaule' 'before the use of metals,' was a very different country from that in which the legions had to contend with the Allobroges and other tribes, with leaders of quite unintelligible names under the great Consul. Long before their time there lived a race of men whose life, if truly illustrated by the result of researches, must have been miserable indeed. The remains before us, scratched up from the upper crusts of the earth, are supposed to represent all these races knew of the various appliances by which human existence is distinguished from that of the beasts of the field. There is something almost ironical in calling these pieces of bone and stone, *produits d'art et d'industrie*. The age of stone was, as we have said, a terrible time for man. As he was most helpless, so was he most exposed to the assaults of dreadful enemies. When he had only hatchets of stone and arrow and spear-heads of bone, the hippopotamus, the elephant, the rhinoceros, the great cave bear, the great cave cat, the hyæna, the aurochs, etc., flourished over and about him. As he got on to polish the stones which before had been simply cut, he associated with himself, under conditions we can never know, the horse, the ox, the goat, the sheep, and the dog.

"In the first case of wedges, hatchets, lance-heads, knives, etc., of flint, picked up in the drift of the bed of the Seine, the Somme, and other rivers, there is an attempt to mark the chronological order. The next series consists of similar implements found in caves and similar places, on which there are traces of human work, showing, as the enthusiastic author of the catalogue thinks, that '*le travail semble avoir sensiblement progressé.*' These relate to the first epoch of the cavern age. The reindeer seems to have had the worst of it in the second epoch of the caverns. His horns and his bones were found to make capital spears, arrows, and fishing-lances, and the dashing antiquary who drew up the catalogue declares they were '*fabriqués avec une grande perfection, et quelquefois ornés de gravures ou sculptures disposées avec gôut!*'

"These cave-men were singular in that they did not care much to carve likenesses of their own sort, which

* This unrivalled collection may be seen on Fridays, by ticket obtainable from the curator, A. W. Franks, Esq., British Museum.

* "Transactions of the Royal Irish Academy," vol. vi. p. 349.

is much to be regretted, as a good *gravure* of an indigenous Gaul would be invaluable. These clever fellows got at last to polishing their hatchets of flint and spear-heads, and there are numbers of very fine specimens of such work, the interest in which is somehow not so great as that excited by the sight of the very stones on which the celts were grooved and polished, with the fissures and grooves as plain in them as they were the very day when the needy celt grinder was disturbed at his labour by the propinquity of an auroch or the sudden onslaught of a cave bear. In spite of their polished manners in hatchets and the like, the *genus homo* had such hard times of it that he took to a beaver sort of life, and at last fled to locustrine habitations, which give to the antiquarian the Third Period of these stirring times, when it was a fight between him and the creatures he would have probably hesitated to call "the inferior animals." He now achieved pottery, and made bodkins and needles of bones, and had horses, cattle, goats, dogs, and sheep, about him, as their bones are found in his dwellings, but there is no trace there of the animals which are called extinct or *emigrés*, and which characterised the first and second epochs of the Stone age. Why they became extinct it is not easy to imagine. They might have emigrated *en masse* as soon as they found their food had gone off to become the prey to rheumatics in lacustrine lodgings, but even that point requires faith or elucidation. We next come to the age of transition, when a lucky fellow got a piece of metal and flourished it about in triumph among the pure and simple lapidarians.

"The articles got out of 'dolmens,' in France and Savoy, which it may not be remembered by us all is now part of France, furnish most remarkable shelves. The names of the proprietors are affixed to the articles, and we are enabled to see that many persons in France are interested in such collections. There is a whole armoury of flint implements in the first and second halls; and it speaks well for the honesty or want of fraudful enterprise on the part of the people that there are comparatively few specimens of uncut and unpolished hatchet-heads of the Stone period, when it is considered how easy it would be to fabricate them, and how difficult to decide whether a tool of that sort was ten thousand years or a few days old.

"In the second age of cavern life, the reindeer played, as we have said, an important part, and his bones and horns were turned to good account, but the elephas primigenius still held on—or is supposed to have done so, though it might be argued that the discovery of his molars here and there in the remains of the period proves nothing. In this epoch we have a human jaw-bone, and there is a whistle made of the phalanx of a reindeer, with a hole bored through it, which it would be hardy to say was ever played upon by the jaw in question, because it was found with it at 'Laugerie Basse.' The luxurious tastes of *homo* now become apparent in barbed arrows and harpoons—he was getting a taste for fowl and fish, and had learnt to grind up grain in a mortar, and had invented a marrow spoon! at least, say Messrs. Lartet and Christy of an instrument, that in it "*on a cru reconnaitre une cuillère à extraire la moelle des os*" (but they add two notes of interrogation), and had taken to using fire rather liberally, and to immense carving on reindeer horns. It is curious, indeed, to find in one of the cases of relics from the Dordogne caves two pieces of bone exactly the same as those which the natives of the Marquesas Isles wear in their nostrils at the present day, along with teeth of animals pierced for ornaments, and the bones of horses, foxes, wolves, wild boars, belonging to a period when man, in spite of marrow-spoons and ruffles, must have looked on hunting as a very serious occupation.

"From sepultures, dolmens, and caves of the third epoch in the second age of stone, we get granite mallets, polishing blocks of sandstone, hatchets of diorite, ophite, aphanite, jadeite, fragments of earthenware, carved deer and other bones, bones of pigs and dogs, along with those of the animals already spoken of in the former epoch, except the reindeer, which suddenly goes off to Norway, and we lose sight of Lartet and Christy completely at this period. M. M. Pommerol shows a case which, in addition to eight blades and scrapers of flint and a hatchet of fibrolithe, contains some carbonized or half-burnt barley; and one human jaw-bone is exhibited by M. de Lavauld; but there is a good deal of uniformity in the objects of this epoch, in spite of the introduction of the dog. We move on to the next, which is that of transition — the first appearance of metal. Although the collections are meagre enough, there are some interesting specimens in this period. Bronze blades appear, and the use of it is seen in the facility with which teeth and bones are cut and pierced, and the number of ornaments for the neck."

The context of this dark riddle concerning man's first appearance in western Europe, shows him not as a resident, but a visitor, working and using rough flint tools, amidst an assemblage of great and fierce animals no longer existing, and amidst conditions now only existing near the Arctic regions. We next see the remains of the long-continued action of land-waters which accompanied the lowering of the temperature, throwing down deep beds of gravel and loam. With this amelioration we come to a reindeer period, and man as a resident without the use of metals. Next comes a race bringing foreign stones and more art, but with similar habits, mingling with the former people, raising lofty tombs and temples, soon obtaining bronze instruments, and living on to the era of history.

The most recent discoveries on this subject are, first, of flint implements, precisely similar in form to those from the Somme Valley, spread for hundreds of miles along the Madras coast, and up to a height of 300 feet on the slopes, in a formation called *laterite*, the equivalent of our gravel bed. No other remains have yet been found. Second, a whole village of the polished stone period, without trace of metal, but with gracefully-shaped pottery, mortared walls, carpentry in olive-wood, elegant art in flint and volcanic stone tools and utensils, found under pre-historic ash-beds at Santorin, amidst the successive volcanic emissions which have destroyed a once-flourishing group of islands.

DR. JOSEPH DALTON HOOKER, F.R.S.,

PRESIDENT OF THE BRITISH ASSOCIATION.

Within four days of his lamented death, on the 12th of August, 1865, Sir William J. Hooker was superintending improvements in the Royal Gardens at Kew, of which he was the director; and which in so many respects he had enriched and adorned by his fine taste, his scientific knowledge, and his untiring energy. His son, Dr. Joseph D. Hooker, a botanist not less distinguished, and who was already assistant-director at Kew, was appointed to the vacant post of director on the 12th of November following. In his first report addressed to the Commissioners of Woods and Forests, dated 1st January, 1866, Dr. Hooker thus speaks of his eminent father: "This is not the place, nor would it be fitting

in me to dwell on the merits of my father; I must, however, claim the privilege of paying such a tribute to the memory of my predecessor as has been unanimously felt to be due to him, viz., that whether as the restorer of these gardens, who, by his sagacity and energy, raised them above all others in excellence, beauty, and utility, or as the originator and founder of museums of economic botany; or as the projector and able assistant of those efforts on the part of our home and colonial governments that have led to the formation of botanical and horticultural establishments in so many of our colonies, in India, and in our foreign possessions; or as the liberal and disinterested patron of private scientific enterprise everywhere, and especially amongst the officers of the army, navy, and civil services, the late Director of Kew has won the esteem and gratitude of his countrymen, and left a name that will ever occupy one of the most prominent positions in the history of botanical science." The present Director of Kew is sprung from a race of botanists. His paternal grandfather, a citizen of Norwich, devoted his leisure time to the cultivation of curious plants. This circumstance, doubtless, helped to create that taste for botany which, in the career of his illustrious father, has borne such ripe fruits. On the maternal side—the grandfather of Dr. Hooker was Mr. Dawson Turner, of Yarmouth. The eldest daughter of this gentleman became the wife of Sir William J. Hooker, in 1814. Mr. Turner's is a well-known name in the annals of British botany; he is the author of various botanical publications, and it was at his suggestion that a narrative of a visit made to Iceland in 1809 by his future son-in-law was given to the world, a work which first brought prominently to the notice of scientific men the name of William Jackson Hooker. So descended, Joseph D. Hooker was born at Halesworth on the 30th of June, 1817. Although thus by birth a native of Suffolk, by association and descent the subject of our notice is a Norfolk man. No county of England has produced an array of such distinguished botanists as Norfolk—Smith, Turner, Lindley, the elder Hooker, are all natives of Norfolk. It is, therefore, befitting on the first meeting of the British Association in the capital of that county that a botanist, and especially that Dr. Joseph Hooker, should occupy the position of president.

Consequent on the appointment of his father to the chair of Botany in the University of Glasgow in 1820, Joseph Hooker at a very early age was removed to the metropolis of the West of Scotland. There he grew up and was educated; and qualifying himself for the Medical Profession he took the degree of M.D. in the University. He did not, however, practise medicine, but devoted his attention to various branches of scientific study; and attached himself to the Royal Navy with the view of prosecuting botanical researeh in distant countries. An opportunity occurred in 1839; in that year Government, for the purpose of Geographical discovery and other allied investigations, fitted out an expedition to the Antarctic Regions. The ships Erebus and Terror, commanded by Sir James Clark Ross, sailed from Chatham on the 29th of September of that year. Dr. Hooker left England as assistant surgeon to the Erebus, and botanist to the Expedition. On the outward voyage Madeira, Teneriffe, and Cape de Verde Islands were visited. A week's stay at St. Helena was turned to account by Dr. Hooker in investigating the vegetation of the island—which he found had been almost entirely changed by the introduction of a new flora. On the 6th of April, 1840, the vessels left St. Simon's Bay. At the rugged, mountainous, and almost desolate Kerguelen's Island, two and a half winter months were spent—and all the plants were gathered by Dr. Hooker which had been detected by Captain Cook in 1779—a remarkable proof of the uniformity of the climate in the island, and of the comparative mildness of the winter season. From Van Diemen's Land the expedition started for the South Pole on the 12th of November. Lord Auckland's Islands, reached after a week's sail, was the only place in the southward course which yielded plants. The vast extent of continent called on the map Victoria Land was discovered during the voyage, together with an active volcano, Mount Erebus, and an extinct one, Mount Terror. The vessels returned to Hobarton in April, 1841. During a second cruise, three months were spent at New Zealand, and were industriously employed by Dr. Hooker in collecting materials for a flora of these islands. A prolonged stay at the Falklands afforded ample opportunities for thoroughly investigating the flora of that interesting and highly important group. A third and last voyage to the south Polar regions was made from Berkeley Sound on the 17th of December, 1842. Owing to the vast proportion which water bears to land, the farther south the voyager penetrates, the more equable the climate becomes. "All the islands and land southward of 45°," remarks Dr. Hooker, "partake more or less of an inhospitable climate, which though eminently unfavourable to a varied growth of plants, still, from its equable nature, causes a degree of luxuriance to pervade the vegetable kingdom, such as is never seen in climates where the vegetable functions are suspended for a large portion of the year." From his extensive observations in the south Polar regions, the botanist of the expedition was led to draw the following interesting scientific inference: "The remoteness of these islands from any continent, together with their inaccessibility, preclude the idea of their being tenanted even in a single instance by plants that have migrated from other countries, and still more distinctly is forbidden the possibility of man having been the active agent in the dissemination of them; on the contrary, the remarkable fact that some of the most peculiar productions are confined to the narrowest limits, is a strong argument in favour of a general distribution of vegetable life over separate spots of the globe. Hence it will appear that islands so situated furnish the best materials for a rigid comparison of the effects of geographical position and the various meteorological phenomena on vegetation, and for acquiring a knowledge of the great laws according to which plants are distributed over the face of the globe."

Dr. Hooker makes full acknowledgment of the aid he received in his botanical labours from his shipmates—and especially from the commanding officer of the expedition—Sir James C. Ross. That officer placed at the disposal of the botanist his private cabin and library, promoted to the utmost the interests of the collections, and himself gathered many of the plants with his own hands.

The result of the researches, and of the collections made by Dr. Hooker during this the most important and interesting scientific voyage promoted by Government since the days of Cook, was a series of superb volumes on the Botany of the Antarctic Regions—embracing the flora of the Auckland Islands, New Zealand, and Tasmania. These volumes contain valuable introductory essays embodying the knowledge and philosophical views of the author on the subjects of which he treats. Her Majesty's Treasury, in aid of the publication, granted the sum of £1,000, to be expended

solely on the drawing and lithography of five hundred quarto coloured plates. These, together with the descriptive matter written by Dr. Hooker, it may be mentioned, have been given by the author free of all cost and all share of the proceeds of the undertaking to the publisher, who has thus been enabled to bring out the series at a very much more moderate price than would otherwise have been possible.

In this disinterested manner, and with much ability, did Dr. Hooker discharge the task of the preparation of these volumes, entrusted to him by the Admiralty in 1843. Numbering six volumes in all, the first two of the series were published in 1847, the last two much more recently. We may here mention that the Colonial Government of New Zealand entrusted to Dr. Hooker the preparation of a work giving a compendious account of the plants of that colony, and placed at his disposal the necessary funds, including a liberal remuneration for his services. The work was issued, in two parts, in 1864 and 1867.

From a photograph by H. T. Whitlock, Birmingham.

Desirous of adding to his acquaintance with the botany of the Antarctic regions, and of the temperate zones, more knowledge of the tropics than he had hitherto had the opportunity of acquiring, Dr. Hooker again resolved on travel, but hesitated between India and the Andes. At length he decided on India, being chiefly influenced by the late Dr. Falconer.* This gentleman drew his attention to the fact of the ignorance prevailing on the geography even of the central

* Dr. Falconer was born at Forres, in the county of Moray, in 1808, and was educated at King's College, Aberdeen, and the University of Edinburgh. In 1829 he received an appointment in the East India Company's service, but before proceeding to India he devoted a year to the study of botany and geology. Superintendent first of the Botanic Garden at Suharunpoor and afterwards of that at Calcutta, it was mainly upon his advice that Government sanctioned the experimental trials of the growth of tea in India which were carried to a successful issue under his supervision. Dr. Falconer returned to England in 1856 or 1857, and during the rest of his life devoted himself to the study of mammalian palæontology. He was Vice-President of the Royal Society, and died 31st January, 1865. Two volumes of "Palæontological Memoirs and Notes" have been recently published, edited by Dr. Murchison. (Hardwicke.)

and eastern parts of the Himalayas, while all to the north was involved in a mystery equally attractive to the traveller and the naturalist.

Sikkim was the region recommended to Dr. Hooker as untrodden ground. The journey assumed the character of a Government mission. The collections were to be deposited at Kew, and the traveller was allowed by the Treasury £400 a-year during the time of his travels. "No part," he says, "of the snowy Himalaya eastward of the north-west extremity of the British possessions had been visited since Turner's embassy to Thibet, in 1789. . . The possibility of visiting Thibet, and of ascertaining particulars respecting the great mountain Chumulari, which was only known from Turner's account, were additional inducements to a student of physical geography; but it was not then known that Kinchinjunga, the loftiest known mountain on the globe, was situated on my route, and formed a principal feature in the physical geography of Sikkim." Dr. Hooker mentions the circumstance that his earliest recollections in reading were of "Turner's Travels in Thibet," and of "Cook's Voyages." The account of the Lama worship, and of Chumulari in the one, and of Kerguelen's Land in the other, took a strong hold on his youthful fancy. It was, therefore, singular that Kerguelen's Land should be the first really strange country he visited, and that too in the first king's ship which touched there since Cook's voyage, and whilst following in the track of that illustrious navigator in south-polar discovery; and that at a later period he should have been nearly the first European who approached Chumulari since Turner's embassy.

Starting on his journey, Dr. Hooker sailed to Egypt, in the same steam-vessel which conveyed the Marquis of Dalhousie, the newly-appointed Governor-General of India, on his way to Calcutta. He cordially acknowledges his obligations to that nobleman, for much personal kindness, for procuring him admission into Sikkim, and in honouring him throughout his travels with the kindest encouragement. A series of letters, written by our traveller to his private friends, and published in the "London Journal of Botany," detail the observations made in Egypt, at Aden, Ceylon, and Madras, and also give an account of an excursion among the plains and hills of Western Bengal, south of the Ganges. Dr. Hooker makes special mention, also, of the obligations he incurred to Brian H. Hodgson, Esq., during his two years' stay in Sikkim, and who was for many years British Resident at the Nepal Court.* Dr. Campbell, the Superintendent at Darjeeling and the Governor-General's agent in communicating with the Sikkim Rajah, afforded him, likewise, much assistance in obtaining access to that country.

Dr. Hooker thus records his first impression of the Himalayas: "Much as I had heard and read of the magnificence and beauty of Himalayan scenery, my highest expectations have been surpassed. I arrived at Darjeeling on a rainy, misty day, which did not allow me to see ten yards in any direction, much less to descry the snowy range distant sixty miles in a straight line. Early next morning I caught my first view, and I literally held my breath in awe and admiration. Six or seven ranges of forest-clad mountains, as high as that whereon I stood (8,000 feet) intervened between me and a dazzling white pile of snow-clad mountains, among which the grand peak of Kinchinjunga rose 20,000 feet above the lofty point from which I gazed. Owing to the clearness of the atmosphere, the snow appeared to my fancy but a few miles off, and the loftiest mountain at only a day's journey. The heavenward line was projected against a pale blue sky; while little detached patches of mist clung here and there to the highest peaks, and were tinged golden yellow or rosy red by the rising sun, which touched these elevated points long ere it reached the lower position which I occupied. Such is the aspect of the Himalayan range at early morning. As the sun's rays dart into the many valleys which lie between the snowy mountains and Darjeeling, the stagnant air contained in the low recesses becomes quickly heated; heavy masses of vapour, dense, white, and keenly defined, arise from the hollows, meet over the crests of the hills, cling to the forests on their summits, enlarge, unite, and rapidly ascend to the rarefied regions above—a phenomenon so suddenly developed that the consequent withdrawal from the spectator's gaze of the stupendous scenery beyond looks like the work of magic. Such is the region of the Indian Rhododendrons." The above graphic description occurs in the preface to Dr. Hooker's magnificently illustrated volume, entitled "The Rhododendrons of Sikkim-Himalaya," which is edited by his father, Sir William J. Hooker, and dedicated to Her Royal Highness the Princess Mary of Cambridge. These plants were discovered by Dr. Hooker, in his botanical mission, and the drawings and descriptions were made by him on the spot. Another work we may here notice, of which the descriptions and analyses were supplied by Dr. Hooker, bears the title, "Illustrations of Himalayan Plants, chiefly selected from Drawings made by the late J. F. Cathcart, Esq., of the Bengal Civil Service." This publication sprung out of a desire on the part of the author to connect the name of his friend Mr. Cathcart, in consideration of the great services he had rendered to botanical research in India, with the history of the botany of that country.*

While prosecuting his labours in the territories of Sikkim, Dr. Hooker, along with Dr. Campbell, was seized, and for a number of weeks detained a prisoner by a faction of the Sikkim Court, having suffered much inconvenience and many hardships during the period

* Mr. Hodgson's high position as a man of science requires no mention here; but the difficulties he overcame, and the sacrifices he made in attaining that position, are known to few. He entered the wilds of Nepal when very young, and in indifferent health; and finding time to spare, cast about for the best method of employing it. He had no one to recommend or direct a pursuit, no example to follow, no rival to equal or surpass; he had never been acquainted with a scientific man, and knew nothing of science except the name. The natural history of men and animals, in its most comprehensive sense, attracted his attention; he sent to Europe for books, and commenced the study of ethnology and zoology. His labours have now extended over upwards of twenty-five years' residence in the Himalaya. During this period he has seldom had a staff of less than from ten to twenty persons (often many more), of various tongues and races, employed as translators and collectors, artists, shooters, and stuffers. By unceasing exertions and a princely liberality, Mr. Hodgson has unveiled the mysteries of the Buddhist religion, chronicled the affinities, languages, customs, and faiths of the Himalayan tribes, and completed a natural history of the animals and birds of these regions. His collections of specimens are immense, and are illustrated by drawings and descriptions taken from life, and with remarks on the anatomy, habits, and localities of the animals themselves. Twenty volumes of the journals, and the Museum of the Asiatic Society of Bengal, teem with the proofs of his indefatigable zeal; and throughout the cabinets of the bird and quadruped departments of our National Museum Mr. Hodgson's name stands pre-eminent. A seat in the Institute of France, and the Cross of the Legion of Honour, prove the estimation in which his Buddhist studies are held on the continent of Europe. To be welcomed to the Himalaya by such a person, and to be allowed the most unreserved intercourse, and the advantage of all his information and library, exercised a material influence on the progress made in my studies and on my travels.—*Extract from preface to Dr. Hooker's "Himalayan Journals."*

* Mr. Cathcart was devoted to the pursuit of botany, and caused a magnificent series of drawings of Darjeeling plants to be made by native artists during his residence there. This collection is now deposited at Kew, through the liberality of his family. After the expiration of his Indian service this gentleman returned to Europe, and died at Lausanne, on his way to England.

of his captivity. Such of his collections as reached Calcutta were forwarded to England, in excellent order, and placed in Kew Gardens. The Government, influenced by a number of the leading men of science, continued to Dr. Hooker the allowance of £400 annually for three years, to enable him to arrange, name, and distribute his valuable collections, and also to publish his manuscripts.

For the information of future travellers, Dr. Hooker has stated that his Indian journey cost £2,000, of which £1,200 were defrayed by the Government. This sum is, however, exclusive of £200 which he paid for books and instruments, and of the freight of the collections to England. A very ample and most interesting account of the journey was published in two volumes, with maps and illustrations, under the title, "Himalayan Journals; or, Notes of a Naturalist in Bengal, the Sikkim and Nepal Himalayas, the Khasia Mountains, etc."

Of Dr. Hooker's travels in the East, the late Professor Edward Forbes thus speaks: "To ramble among the mightiest monuments of the earth, to wind, as it were, in and out among the vertebræ of the old world's backbone, must be a great pleasure to any traveller. How much more to one who is thoroughly trained and experienced in research, a naturalist of the first degree. Dr. Joseph Hooker is at the present moment one of the most distinguished of European botanists. At a comparatively early age he has gained, and justly, a reputation that, great as it now is, grows daily. The author of the 'Flora Antarctica,' one of the most valuable contributions to systematic and geographical botany ever published, has gathered new laurels within the tropics, and has proved himself, if more proof were necessary, as worthy as ever of the distinguished name he inherits from his illustrious father." Edward Forbes also, in his address as president of the Geological Society, made the following further allusion: "Every student of Indian geology will be delighted at the appearance of the Himalayan Journals of Dr. Joseph Hooker, a work that will do much to sustain the reputation of the British School of Natural History. The geologist will find in it a rich store of facts of the highest interest, and for the inquirer into glacial phenomena it abounds with new and valuable data."

If still further testimony were wanted to the high merits of Dr. Hooker as a naturalist, it will be found in a letter of date 11th December, 1850, addressed by Baron Humboldt to Sir William J. Hooker, and published in the "Journal of Botany." "Six days ago," wrote that illustrious *savant*, "I received an admirable letter from your son, containing a perfect treasure of important observations relating to the mountain masses of Himalaya, their geology, meteorology, and botanical geography. What a noble traveller is Joseph Hooker! What an extent of acquired knowledge does he bring to bear on the observations he makes, and how marked with sagacity and moderation are the views that he puts forward! I can neither part with such a remarkable letter, nor keep to myself the *resumé* which it contains of his researches in Thibet and on its confines, therefore I desire that it should be published, and correctly published, in England. . . . I feel no little pride in being known to enjoy the friendship and correspondence of your son. When he returns to us in spring, he will find his own fame widely diffused and solidly based."

We should have mentioned before that Dr. Hooker lectured from the Botanical Chair in the University of Edinburgh, in 1845, for Professor Graham, and that on the death of that gentleman he became a candidate for the vacant chair. After a severe contest, his opponent, Dr. J. H. Balfour, secured the appointment. In 1846 Dr. Hooker was appointed Botanist to the Geological Survey; and in this capacity he contributed a valuable paper to the Memoirs of the Survey, entitled, "On the Vegetation of the Carboniferous Period as Compared with that of the Present Day." This paper deserves the careful study of all fossil botanists, and will be found in the second volume of the "Memoirs."

In this sketch the interesting circumstance deserves to be noted that, after his return from his eastern travels, Dr. Hooker married the eldest daughter of the Rev. J. Stevens Henslow, Professor of Botany at Cambridge.

The materials at the command of Dr. Hooker for a work on the botany of India are very large. In conjunction with his friend Dr. Thomas Thomson, such a work was indeed undertaken, and under the title of "Flora Indica," one volume has been published. The intention of the authors to continue the work was at the time notified, the one in the Hookerian Herbarium at Kew, the other at the Calcutta Botanic Gardens; but so great is the expense attendant on the production of such a work that it will be almost impossible to proceed with it, unless under Government patronage and encouragement.

On scientific errands repeated visits have been made to the Continent by Dr. Hooker. In the autumn of 1860 he took a short tour in Syria, in company with Mr. Hanbury, F.L.S., during which he paid especial attention to the oaks of that country, in the hope of being able to throw some light on their very intricate and confused history. The result of the investigation was given to the Linnæan Society, on 20th June, 1861, in a paper on "The Three Oaks of Palestine." In compliance with the wishes of several distinguished Arctic voyagers, Dr. Hooker drew up an account of the affinities and distribution of the flowering plants of the north-polar regions, which was also communicated to the Linnæan Society. The contributions of our naturalist to the transactions of that body from time to time have been numerous and valuable. We may name the papers by him entitled, "On the Plants of the Galapagos Archipelago," "On the Structure and Affinities of Balanophoreæ," and "Illustrations of the Floras of the Malayan Archipelago and Tropical Africa." Dr. Hooker has also contributed largely to the "Journal of Botany," edited by his late father, and is the author of the article "Himalaya," in the "Encyclopædia Britannica." It is, however, impossible to enumerate all his various literary and other labours in the prosecution of natural science. As an authority, he is frequently referred to, and, as a trustworthy observer, widely quoted by other writers.

Connected with some of the first scientific societies, and constantly consulted about their administration, a juror at exhibitions, and examiner to the Apothecaries' Company, London University, and Army Medical Service, Dr. Hooker, as Director of Kew Gardens, has also to conduct a correspondence with all the public offices, with India and the colonies, on botanical and horticultural subjects, besides being answerable for the condition and management of the gardens.

His is a public position of much labour as well as of much honour. But we may safely assume that, guided by the example of his illustrious and lamented father, and with his own experience, unwearied industry, and large scientific acquisitions, neither the public interests nor the gardens at Kew will suffer in the hands of the present Director. Nor can we conceive that the British Association, in raising to the honourable post

of its president Dr. Joseph Hooker, "the eminent son of an eminent sire," shall have any cause to regret the selection which it has made.

YARMOUTH BLOATERS.

We can trace back the history of the Yarmouth herring fishery to a date anterior to that of the Norman Conquest—there being records in existence to show that this fishery, among others, was subjected to legal supervision and regulation in the days of Edward the Confessor. A few centuries later the care of the clergy for the fishermen is evidenced by the fact that Herbert Bishop of Norwich, in the reign of William Rufus, built a church in the town of Yarmouth for their accommodation. In those old Catholic times fish was a general desideratum on fast-days, and the herring fishery flourished in consequence of the universal demand. By the time of Henry III., about the beginning of the thirteenth century, the Yarmouth herring fishery was known as the "worthiest in Europe." But though we may trace the herring as an article of food to a very remote antiquity, we cannot do the same with the bloater, nor does it at all appear when bloaters first began to be eaten, or who it was that first invested the herring with those sapid and savoury qualities which make the bloater, when eaten in perfection, so delicious. We have heard enthusiastic eaters declare that the bloater is an invention beyond the reach of art, and that its discovery must have been due to some fortunate accident, as in the case of Lundy Foot's snuff or Charles Lamb's roast pig!

But before eating your bloater you must catch your herring, or somebody must catch it for you; so, with the reader's permission, we will go on a short fishing trip. It is a mild evening in the middle of September, after a day of fair weather, with a steady gentle breeze blowing from the north. The lugger which awaits us lies, with a crowd of others, a little way out; and, jumping into a boat, we are not many minutes in getting alongside and boarding her. Then it is up anchor, trim sails, and off we go towards the deep sea. We have some dozen men on board, several of whom are not sailors by profession, or fishermen either, save during the herring season; but all are active handy lads and well versed in the business that has to be got through. Looking around us, we see a whole fleet of fishing vessels bound on the same expedition as ourselves, some already far out to sea, others following in our wake, and others again just about to start. The low sunlight gleams on their rusty sails, transforming them into sheets of flame, while their fitful reflections flash in broken splendour from the restless billows. But ere long the sun dips behind the dull land-level—the crowd of sails sink out of sight in the shadows of the gloaming, the surface of the sea grows black and dark, and the wild talk of the waves waxes louder as we get farther out into the open, and the breeze freshens.

So long as there is any daylight nobody thinks of shooting the nets, experience having proved that night is the fisherman's best opportunity; but darkness has no sooner set in than preparations are made for getting the nets overboard. Herrings are caught by means of nets suspended from the surface to the depth of some thirty feet, and having meshes not less than an inch in diameter. The nets are fifty yards long each, and ten or twelve in depth; and the object being to make a wall of net in the water of as great a length as possible to intercept the fish in their progress, the nets are joined together as they are shot, and being weighted at bottom and buoyed at the top, present one unbroken barrier for the whole of their united length, which is often a mile or more. The mesh is large enough to admit the head of an average herring, but not the body; thus fish of a small size get through and escape, while the full-grown ones are detained by the net catching in the gill. Much alacrity is shown in getting the nets into the water as soon as all is ready, and the motion of the vessel has been sufficiently retarded by taking in sail—the men paying them out with striking rapidity, while the slow track of the lugger is marked by the floating buoys designating the position of the sunken snare.

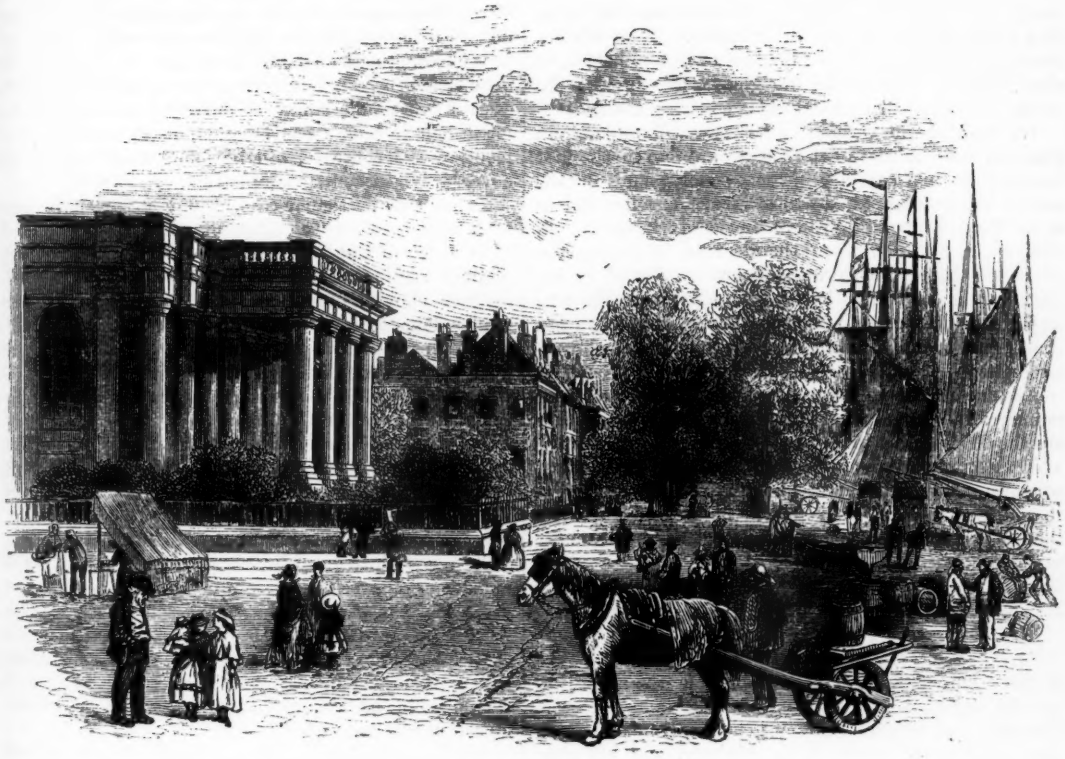
Now follows a period of leisure, and if you choose you may wrap yourself in a boat-cloak and go to sleep for an hour or two, as many of the hands are doing. The skipper, you may note, is wide awake; he is in fact on the look-out for indications of fish, the presence or the absence of which his practised eye is skilful in detecting. By-and-by he signals one or two of the hands, who, at his direction, haul up a small portion of the net, by the appearance of which he is able to judge whether he has made a fortunate cast or the reverse. If, after an hour's waiting, the net came up blank, he would probably haul the whole in again and proceed to another ground. But such is not the case now—those silvery sparkles that shone out of the dark water were a suggestive sign of what is going on below, and he is well content to await the event.

There is a faint glimmer of dawn in the east when the hauling in begins, and soon all hands are busily engaged in the work, and are moreover in high spirits at the sight of the "take," which is far beyond their expectations. Some parts of the net come up like a shimmering sheet of silver, being so crowded with fish that it seems a wonder they were not rent asunder. In other portions there are comparatively few, and in one place the net has been torn by the dog-fish, and numbers of the herrings mangled and destroyed. Such damage is too common to excite much remark, fisher Jack being little given to comments merely verbal, and contenting himself by knocking Mr. Dog-fish on the head whenever he can catch him. Hauling in a full "take," if an interesting process, is rather a slow one: every fish has to be extricated from the net as it comes over the side, and as fast as they come they are deposited in the "swills" with a plentiful sprinkling of salt, and stowed away below or on deck. It is broad daylight long before the whole of the nets are on board, and now, crowding as much sail as we can, we run for Yarmouth sands by the nearest track.

Arrived at Yarmouth, the herrings are taken on shore without loss of time, and if they are not already the property of some contractor or fish-curer, are submitted at once to public auction, the sale taking place either on the open sands or at some well-known sale-room. At the beginning of the season prices will run high, and a good proportion of the catch will be bought by the local dealers and hawkers, who will retail them for consumption while they are yet fresh. Also a certain proportion will be salted or pickled as white herrings—the cheapest form in which herrings find their way to the market. But the herring for which Yarmouth has been famous almost from time immemorial, is the "red," or smoked herring, an article known and appreciated throughout the whole civilised world, but only known in perfection by those who have eaten the Yarmouth bloater in its best condition—for as surely as "the child is father of the man," the original red herring was the father of the unrivalled bloater. Let us see how the "reds" are

manufactured, after which the preparation of the bloater will present no difficulty.

Red herrings are intended to keep good for a whole year, and are thoroughly cured with that view. As soon as the fish are brought on shore they are carried to the fish-house, where they are heaped on the stone floor to



YARMOUTH QUAY.

the number of tens or hundreds of thousands, and are plentifully salted. Here they lie for many days, until thoroughly saturated with the salt, and till all superfluous moisture has drained from them—the floor of the place being inclined for that purpose. When ready for the "hanging" process, they are shovelled with a wooden shovel into a large vat of water, and well washed, to cleanse them from the salt, scales, and dirt. As fast as they are cleansed they are taken out of the vat by women, technically called "rivers," whose business it is to hang them on the "spits" for smoking, which operation they perform with wonderful celerity. The spits are round rods made of fir, about four feet long and a little pointed at one end; the point of the spit is inserted under the gill of the fish and comes out at the mouth, and in this way the fish are spitted at the distance of about two inches apart (so that no one fish touches another) until the spit is full. So soon as they are filled the spits are passed on from hand to hand to their proper places in the firing or smoke-house, which is a room, or series of rooms, about sixteen or eighteen feet square, and from twenty to thirty feet high, and filled up with wooden fixtures on framework supported by joists, for the reception of the spits. When the spits have been laid tier above tier, until there is no room for more, the tails of the lowest tier of fish will be about seven or eight feet above the brick floor. Now comes the critical business of smoking: fires of wood in a green state are lighted on the floor, the wood most preferred being oak, though beach, ash, and elm are sometimes used; the fire must not be too quick or too slow, and needs to be well watched and regulated. To facilitate the smoking process the tiles of the roof are laid so as to allow the smoke to escape, and there are ventilators under the eaves which can be opened or shut at pleasure.

The "reds" for home consumption require to be smoked for about twenty days, while those intended for exportation should be smoked for ten days longer. When the allotted time has expired the fires are extinguished, the house allowed to cool, and in a few days the cured fish are ready for packing in barrels. The packer receives from his assistant six or eight fish at a time as they are drawn from the spit, and lays them on their backs in tiers round the bottom of the barrel, the heads close to the side staves, the tails meeting in the centre of the cask. When these tiers rise above the ends of the side staves the fish are pressed down and the upper layer is put on with the backs of the herrings uppermost. In this state they are left to settle down, and in a day or two have sunk into the cask sufficiently to allow of its being headed: when this is done the "reds" are ready for the market.

Such being the genesis of the red herring, what is that of the bloater? Well, the fact is that the bloater goes through all the processes applicable to the "red," but not being wanted to keep for a year, or even for a month, he is "put through" with much more rapidity, more careful ceremony, and with a tender regard for ultimate results. Note, if you please, that the bloater

is selected for peculiar treatment because he is the *élite* of his class—the largest, handsomest, most fleshy and corpulent, in all respects the aristocrat of the herring tribe—the only real specimen, in fact, of the "bloated aristocrat" to be found in the whole domain of natural history. Look at him as he lies in the dish tempting your morning appetite; mark his rich colouring, rivalling that of an ancient master—the deep olive tones on the back, the metallic brilliancy of the sides softening into a creamy hue in his under parts. Then what a fragrance he exhales as you lay him open, and hasten, at the instigation of your salivary glands, to pay him the posthumous honour to which he is so richly entitled.

We need say no more. The reader will understand that the fine qualities of the bloater are due in the first instance to his superior personal merit, and in the second to the prompt and delicate treatment he receives at the hand of man. So prompt, indeed, is the treatment, that upon occasion, when the demand is urgent, the whole of the several processes are completed in the space of ten or twelve hours, so that the herring who is joyously disporting himself to-day in his native sea shall figure to-morrow as the choicest viand of the breakfast table.

As an article of commerce, the bloaters are not crammed into barrels and sent across the seas. Rather are they laid loosely together in osier baskets containing a dozen or two each, and despatched by the quickest conveyance to the happy recipients. We must not forget to add, that to be enjoyed in their finest perfection they should be eaten at Yarmouth, while yet reeking from the smoke-house.

MY FIRST CURACY.*

CHAPTER I.—SEARCH AFTER A CURACY.

A FIRST curacy, I have always held, is the most important step that can be taken in a clergyman's career. The stamp of his first curacy generally remains upon him during the whole of his ministry, and his after administrations are certainly much influenced by the circumstances of his earlier ones; indeed, his whole tone is tinged through life by the associations he forms in the first years of his ministerial office. Hence, then, the great importance of a careful choice in the matter.

Sometimes a sphere of labour opens naturally; at other times it is a source of great difficulty to know which branch in the ministerial office to choose, or for what particular field of pastoral work the candidate for orders is most suited. Of course there is a certain amount of risk to be gone through, for a man can never know positively that he is qualified for any particular post until he has attempted to fulfil its duties. Having, however, some general idea of what post is most likely to suit his peculiar individual temperament, the next thing to ascertain is also a very important one, namely, the disposition and character of the rector or vicar under whom the young minister will have to work. Much of the success or failure of many a man's subsequent ministry depends upon the direction and bent given him at first starting. Men are generally totally inexperienced when they enter the ranks, and therefore, unless they have a fit and judicious officer, they are liable to commit many serious errors of judgment, to say and do inexpedient things.

But above all other considerations, should unison in matter of doctrine be carefully ascertained before a compact is concluded between the intended vicar and curate. If diversity of opinion in vital points is afterwards found to exist, how painful to the feelings of both will be the discovery! The usefulness of both will be greatly impaired, their influence will be nullified, and the parishioners suffer, in consequence of this lamentable dead lock in doctrinal matters. It is perfectly necessary for the well-being of a parish, that not only should its clergy pull together, but in the same direction; if they do not, disagreeables are sure to arise which must end in unpleasantness on both sides, and in injury to the people. A personal interview is, in my opinion, the easiest and readiest way of obviating such a difficulty, for in half an hour's conversation, more mutual agreement, or the contrary, will be found, than can be discovered by a dozen lengthy letters.

In my own particular case, I did not wish to work with what is called "an extreme man" of any kind. If the Church of England were to be divided into several distinct sections, it might be necessary to make a distinct choice; but I cannot approve of every particular detail in any of the so-called "parties," and I wished in my first curacy to have some liberty to act upon my own conscientious views, within the limits of what I believed to be according to the word of God and the standards of the Church.

I felt myself also obliged to be rather careful concerning the size and population of the parish in which I was to work; for while, on the one hand, I did not desire a very restricted field for what energies I possessed, on the other, my health not being strong, I did not wish to be completely overwhelmed with the amount of duty required from me all at once. Some of my readers may fancy that I am somewhat fastidious when I go on to say, that I was rather particular as to the locality of my future scene of labours: I objected to the extreme north or south, nor did I wish to be whelmed in by coalpits on every side, or to bury myself in complete rural retirement.

Yet in the end, one of these conditions was my lot for the first seven eventful years of my ministerial life.

Having then settled in my mind what I considered I wanted, and for what post I thought I was fitted, I inquired among my friends, and stated my wants to my few clerical neighbours. These all kindly promised to look out for me. Now this "looking out" generally ends in no satisfactory result—at least I found it so in my own case, and I do not think mine was a peculiar one. It is the usual way of getting rid of a troublesome consultation about any situation or office, to say, "Oh, I will look out for you." At the moment, the intention may honestly be to "look out," but in the multitude of other concerns the promise is forgotten, and the applicant is left to look out for himself. So at last, being tired of waiting for answers from my friends which never came, I began to take in the clerical papers. I pored over the advertisements in the "Record" and the "Guardian," and the "Ecclesiastical Gazette." I answered numbers of advertisements in these and other clerical papers, but they all came to nothing.

At last I resolved myself to advertise, and having procured the services of a friend who was considered a capital hand at such things, he wrote my advertisement as follows:—

"Wanted a Curacy, with title to Orders for the September Ordination. The advertiser possessing small private means, stipend required £60 a-year. Views in strict accordance with the Prayer-book. Experienced in Sunday Schools, Evening Adult Classes, &c."

This advertisement brought me no less than thirty-

* The writer, now senior curate in a large London parish, thinks that his early experience may be useful to some of his younger brethren, as well as interesting to general readers.

three replies! I was perfectly bewildered with them. But the variety of work required, the curious questions asked, such as "Is your health good?" "Are you a gentleman?" "Do you sing?" "Are you married?" "Are you active?" "What 'private property' have you?" The replies demanded by return of post, with lists of references, completely overwhelmed me.

Now, I had only four clerical references, so I could not, of course, give them to all the thirty-three incumbents desiring them. My friends were good natured, no doubt, but I could scarcely expect them to write and post thirty-three testimonials in my favour; so the plan I fixed upon was this: I picked out six of what I considered the most likely curacies to suit me, and wrote polite answers to the remaining incumbents, thanking them for their replies to my advertisement, and stating that I was already in treaty, but that if I failed I would immediately open a correspondence with themselves. I took this trouble mainly because I think it is only due as a matter of courtesy from one gentleman to another. Now some of these answers to my advertisement were, as I have already hinted, extremely amusing. I will therefore transcribe a specimen of some of them, for I have kept the originals still by me, though it is now a good many years since I received them.

One incumbent wrote: "I require a curate to take the entire charge of two small parishes: there are two churches, they are two miles apart; there will be four schools for the curate to look after, and all the sick and poor will have to be visited. I regret to say that, owing to my living being small, and myself in indifferent health, I cannot come up to the terms required in your advertisement, but I should be happy to offer you £30 a-year!" This incumbent added in a postscript, "In bad weather in the winter season, I generally lend my curate my pony to ride between the two churches on the Sunday."

Another vicar wrote from the wild districts of Northumberland, "You are just the man I want. I think we shall get on well together. I reside in the parish and do half the work (population 2,300); but I shall want you to go over every Sunday afternoon to a distant hamlet, and take a service in a school church I have erected there: the distance is a little more than four and a-half miles. I may as well mention that I cannot give you £60 a-year, but I dare say you would accept £45."

I did not accept the £45, nor did I relish the idea of a walk of nine miles, winter and summer, in the afternoon, after taking my full share in the morning duty, and being expected, I suppose, to do the same in the evening, in the parish church, upon my return.

I have previously stated that I had reserved six of those answers to my advertisements most likely to suit me; these, from circumstances over which I had no control, dwindled down to four. I may as well mention that at this time I was residing in the south of England, and this fact decided me to write to an incumbent in Somersetshire, saying that I would come and look at his parish, it being the nearest in point of distance to my temporary home.

Having received a cordial assent to my request, I started the following morning by an early train, and in due time arrived at the indicated station. On the platform I met a farmer-like looking fellow, with high yellow skin gaiters, dressed in a rough shooting coat, carrying a stout walking-stick in his hand. "Are you Mr. C——," he shouted to me, as I got out of a second-class carriage. I replied that I was. "Well," said he, "I am the incumbent you want to see;" and then, giving me a hearty and rather heavy slap on the back, he added, "Those shoes won't do for this country, you must get thicker ones." We soon started in a sort of dogcart of ancient build, and, after a pleasant ride through rather a flat country, we pulled up at a small but prettily situated house; at least the number and variety of the clusters of climbing roses on all sides could not fail to make it look pretty and cheerful in the summer season. This was the Parsonage; into which I was duly ushered, and soon introduced to two elderly grim-looking ladies.

"My sisters," said the vicar. I do not hastily judge persons by appearances, as the reader will allow, when I say that the non-clerical costume and manner of the incumbent had made no unfavourable first impression, but rather the reverse. The look and manner of the ladies, however, could not be mistaken. I confess my heart sank within me.

"I hope you do not care for society," said my host, as soon as he had assisted every one most bountifully at dinner. "I mention this because there is positively none for miles round." I replied, "I certainly did like a little, as I thought society enlarged one's ideas, which were very liable to grow contracted if left to feed upon themselves. The mind requires change and exercise for its health, as well as the body."

At this remark, the two old ladies looked at each other, then muttered something which sounded very ominously to my ears, and turned not the most pleasant countenances in the world upon your humble servant.

After our early dinner, to which the vicar did ample justice, he took me out to see his church, schools, and parish generally. The former was a really fine specimen of the perpendicular style of architecture; it was also in good repair, and what restorations had been done had been carefully performed. I tried my voice and found it suited the edifice.

We next went to the schools, which, being in the state of rebuilding, I could not say much about; but with the parish I was very much disappointed: it was perfectly flat, and half of the entire area, the incumbent told me, was under water nearly half the year. He also informed me, as another drawback, that Dissenters formed the majority of the inhabitants. In the evening the vicar was gaiety itself; but the conversation soon ended, and he proposed a game at long whist! My reply, I have no doubt, settled my unsuitableness with the ladies. Next morning, while thanking him for his hospitality, I declined the curacy; the water, the whist, and the ancient ladies, decided me in the negative.

The object of my second search lay in a beautiful part of the west of England. Having to remain at Gloucester for two hours, the trains not suiting, I resolved to go and see the cathedral. While looking over the splendid nave, I asked the attendant verger some questions about the village to which I was going, when suddenly he exclaimed, "You are not going to *that* place, surely?" These words were addressed with marked emphasis. I had scarcely time left to say that I intended doing so, when the chimes assured me I should have to run to catch my train, which I just managed to do. As I journeyed along, I ruminated upon the verger's words, and not in a very hopeful frame of mind reached the station nearest to my destination.

Here I had to wait some time, whilst a gig was being prepared to take me to the parish I was in search of, as I did not feel inclined for a very wet walk of five or six miles through unknown country roads. I was very wet and cold when I reached the parish, but the genial welcome of the rector and his wife, and a well warmed and brilliantly lighted room, soon made me feel at home and comfortable.

The rector was a true and perfect gentleman. His church was very pretty, and in perfect order, as was also the churchyard. I do not say that these outward things are proofs of similar care in regard to the living church and the spiritual vineyard; but I have found that where a church is dirty, and a churchyard in disorder, there is likelihood of carelessness or indolence in higher matters. I found that the schools were very badly attended, and though the parish itself was charmingly situated, yet, when its moral aspect was looked upon, it was most vile and depressing to one's feelings. During the course of our conversation I drew from the rector this significant fact, that, as soon as I was firmly located, he intended leaving the parish and myself to our fate.

Nearly the whole of the inhabitants had been drawn thither by some chartist, or other strange society, the idea being that everybody should possess his own acre of ground, his pig, his cow, and his cottage rent free, and that he should enjoy a life of rural contentment. Now the practical result of this scheme was not quite what its sanguine promoters anticipated, and finding it the fixed determination of the rector to leave me to fight my own battles, I declined the curacy.

I was now growing a little disheartened at this double failure in my search, but resolved to persevere. Accordingly, having received an invitation to visit the incumbent of a parish situated in one of the busiest parts of Lancashire, I went northward. I liked what I saw of the church, clergy, and schools, and was not prejudiced against what I saw of the people themselves. I had very nearly accepted the curacy, though a little distracted with the noise proceeding from no less than seven lines of railway running through the parish (indeed, the principal station was at the bottom of the parsonage garden), when I turned and asked the incumbent the extremely natural question, where I was to lodge. "Ah," answered he, "that is the difficulty: unless we can get the millowner to knock two of that row of workmen's houses into one, you will not be able to get lodgings nearer than N——," mentioning a large manufacturing town about three and a-half miles off, the only road to which was over cinder heaps, and along the side of blast furnaces.

I felt at once that I was not suited for this work. I remarked to the incumbent that it would have been but an act of justice if he had just mentioned this little fact about the difficulty of obtaining lodgings, as it would have prevented my taking a useless journey to the north, and saved me between £5 and £6, no small matter to a poor man.

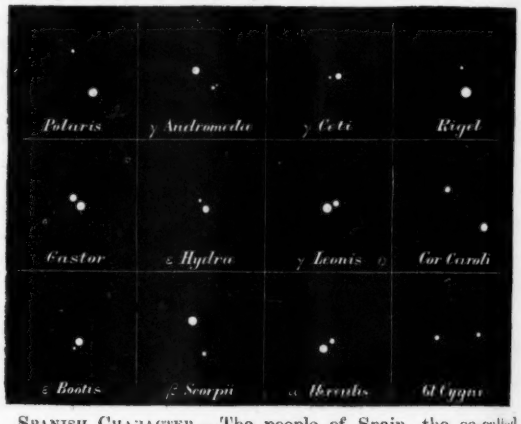
I returned to my temporary home wearied in mind and body, and with my small means much straitened. I began to fear that I should not succeed in obtaining a curacy at all, in spite of the numerous answers to my advertisement in the first instance.

Growing rather reckless as to the position of my next search, I resolved to take any one that offered. Accordingly, I wrote to one of the remaining answers I possessed, when, in reply, I received an answer by return of post, saying that the whole of the references were personally known to the gentleman with whom I was in correspondence, and that he should be happy to close with me at once, as he was in immediate want of a curate.

I accepted his offer, though I rather objected to live in the parsonage with himself and wife. There was no family; but finding that there existed no alternative, as no lodgings could at the time be obtained, I had to assent, and accepted the curacy.

Varieties.

Double Stars.—In connection with our remarks on binary systems in last number, the following diagram exhibits a selected list of double stars, as seen in an inverting astronomical telescope. Some of them are, probably, only optically double, their apparent juxtaposition being the result of the two stars being seen from the surface of the earth in the same line of direction, or, if they be binary systems, their time of revolution must extend over a lengthened period. Castor, Epsilon Hydræ, Gamma Leonis, and 61 Cygni, have been proved to belong to the latter class of objects. Gamma Andromedæ is triple, the companion being easily resolvable into two components when viewed through a good defining telescope, especially when the star is at high altitude about sunrise or sunset. The list of known binaries exceeds a hundred, without including several double stars suspected to belong to a common gravitational system.



Spanish Character.—The people of Spain, the so-called "lower orders," are superior to those who arrogate to themselves the title of being their betters. This may have arisen in this land of anomalies, from the peculiar policy of Government in Church and State, where the possessor of religious and civil monopolies, who dreaded knowledge as power, pressed heavily on the noble and rich, dwarfing down their bodies by intermarriages, and all but extinguishing their minds by inquisitions, while "the people," overlooked in their poverty, were allowed to grow out to their full growth, like weeds of a rich soil. They in fact have long enjoyed, under despotisms of Church and State, a practical and personal independence, the good results of which are evident in their stalwart frames and manly bearing. On the masses, the edifice of Spain's greatness is, if ever, to be reconstructed.—*Ford's "Spain."*

Trees of Missouri.—Professor Swallow, of the Missouri Geological Survey, gives the following actual measurements of large trees in South-east Missouri:—The largest is a sycamore in Mississippi County, 65 ft. high, which, two feet above the ground, measures 43 ft. in circumference. Another sycamore, in Howard County, is 38½ ft. in diameter. A cypress in Cape Girardeau County, at a distance of one foot above the ground, measures 29 ft. in circumference. A cottonwood in Mississippi County measures 30 ft. round, at a distance of six feet above the ground. A pecan in the same county is 18 ft. in circumference. A black walnut in Benton County measures 22 ft. in circumference. A white oak in Howard County is 26 ft. in circumference. A tulip tree (poplar) in Cape Girardeau County is 30 ft. in circumference. There is a tupelo in Stoddard County 30 ft. in circumference. There is a hackberry in Howard County 11 ft. in circumference. A Spanish oak in New Madrid County 26 ft. in circumference. A white ash in Mississippi County is 16 ft. in circumference. A honey locust in Howard County is 13 ft. round. There is a willow in Pemiscot County that has grown to the size of 24 ft. in circumference and 100 ft. in height. Mississippi County boasts of a sassafras that must be king of that tribe; it measures 9 ft. in circumference. There is a persimmon in the same county 9 ft. in circumference. In Pemiscot County there is a dogwood 6 ft. in circumference. In Mississippi County papaws grow to a circumference of 3 ft., and grape-vines and trumpet creepers to a circumference of 18 in. to 22 in.